REMARKS

In the Office Action of February 18, 1998, Claims 5-7 and 34-36 have been objected to under 37 C.F.R. §1.182(d) for not reciting the SEQ ID Nos of the claimed amino acid sequences. Claims 5-7 and 34-36 are presently amended to recite the relevant SEQ ID Nos. Withdrawal of the objection to Claims 5-7 and 34-36 is therefore respectfully requested.

Claims 1-5 and 7 have been rejected under 35 U.S.C. §§102(a) and (e) as allegedly anticipated by U.S. Patent 5,473,049 to Obermeier et al. The Examiner has alleged that Obermeier et al. disclose FFYTPKTRREAED and further discloses flanking sequences from 0 to 40 amino acids. In response to the rejection, Applicants have amended Claim 1 to recite that X_1 and X_3 are not derived from more than 5 contiguous amino acids from human proinsulin or human GAD65. The size of X_2 has also been amended to recite "10 to 50 residues" rather than "10 to 100." Applicants respectfully request therefore, withdrawal of the rejection of Claims 1-5 and 7 under 35 U.S.C. §§102(a) and (e).

Claims 1-4, 6-7, 30-33 and 35-36 have been rejected under 35 U.S.C. §§102(a) and (e) as allegedly anticipated by WO 92/20811 to Zymogenetics. The Examiner has alleged that Zymogenetics teaches GAD peptides having the amino acid sequence FWYIPPSLRTLED flanked by amino acid sequences from 0 to 40 amino acid residues. Applicants respectfully submit that Zymogenetics provides human islet cell GAD amino acids 1-585

and purportedly teaches a method of identifying autoantibodies to human islet GAD and that GAD polypeptide may be administered to enable binding to GAD receptors on human islet cells or immature T or B cells. Zymogenetics provides no teaching of identifying peptides capable of interacting with T cells and modifying T cell function. Applicants respectfully submit that GAD peptides recognized by autoantibodies are not necessarily recognized by NOD GAD reactive T cells. In fact, art cited by the Examiner, i.e., U.S. Patent No. 5,674,978 to Tobin et al., column 36, lines 47-49, states that "GAD peptides recognized by autoantibodies were different from those recognized by NOD GAD reactive T cells." In addition, Claim 1 has been amended to recite that X_1 and X_3 do not comprise more than 5 contiguous amino acids from proinsulin or GAD65. Thus, the present invention is distinguished over Zymogenetics et al. Applicants respectfully request therefore, withdrawal of the rejection of Claims 1-4, 6-7, 30-33 and 35-36 under 35 U.S.C. §§102(a) and (e).

Claims 1-4, 6-7, 30-33, and 35-36 have ben rejected under 35 U.S.C. §§102(a) and (e) as allegedly anticipated by U.S. Patent No. 5,674,978 to Tobin et al. According to the Examiner, Tobin et al. teach recombinant GAD protein which comprises the FWYIPPSLRTLED with flanking sequences comprising 0 to 40 amino acids as reflected in Figures 3a-3d, in particular. The Examiner has further posited that Applicants merely set forth a property inherent in an otherwise old GAD

composition. It is respectfully submitted that the claims as presently amended distinguish over Tobin et al. In addition, Applicants respectfully submit that (as stated above for Applicants' response to the rejection of Claims 1-4, 6-7, 30-33 and 35-36 as anticipated by Zymogenetics) Tobin et al. specifically teach that GAD peptides recognized by autoantibodies are different from those recognized by NOD GAD reactive T cells. See Column 36, lines 47-49. Thus, the functionally limiting language of the present claims should be seen as an integral part of the present invention and not, as the Examiner has suggested, a recitation of an inherent property in an otherwise old GAD composition. Applicants respectfully request therefore, withdrawal of the rejection of Claims 1-4, 6-7, 30-33, and 35-36 under 35 U.S.C. §§102(a) and (e).

Claims 1-4, 6-7, 30-33 and 35-36 have been rejected under 35 U.S.C. §§102(b) as allegedly anticipated by Kaufman et al., 1993 *Nature 366*:69-72. Kaufman teaches that GAD is a key antigen in the induction of murine IDDM. The fine specificity of the anti-GAD T-cell response was mapped using an overlapping set of peptides that span GAD65. Specifically, a set of 38 peptides, each 20-23 amino acids long and spanning the entire human GAD65 with overlaps of 5 amino acids were used to test for proliferative responses in NOD mice. Applicants respectfully submit that as presently amended, Claims 1-4, 6-7, 30-33 and 35-36 are distinguished over Kaufman et al.

Applicants respectfully submit that the present invention is predicated in part *inter alia*, on the surprising discovery of a common region in proinsulin and GAD which is effective in treating IDDM. None of the cited prior art teaches or suggests Applicant's claimed invention.

In view of the amended claims and the foregoing remarks, it is respectfully submitted that the present application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

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